

# HAMILTON HARBOUR REMEDIAL ACTION PLAN 2012

## STAKEHOLDER FORUM MEMBERSHIP

And

## TERMS OF REFERENCE

**Introduction:** This will be the third time the Hamilton Harbour Remedial Action Plan (HHRAP) Stakeholders will be convened. The first was in 1986, the second in 1998.

Each time a group of Stakeholders representing the various Harbour interests is convened it has been for a particular purpose and consequently has utilized a specialized terms of reference for the task it is charged to undertake. The first Stakeholder Group oversaw the preparation of the State of the Harbour Report known as Stage 1 followed by the Remedial Action Plan Report known as Stage 2. Between 1998 and 2002 the second Stakeholder Group known as the RAP Forum reviewed and updated the HHRAP Stage 2 Report. A lot of work and research has been completed since 2002 and we now have a better understanding of the issues. The present convening of the Stakeholders Forum is to consider this new information and review and update the delisting objectives defined for Hamilton Harbour as an Area of Concern under the Great Lakes Water Quality Agreement.

**Purpose:** The purpose of the HHRAP Stakeholder Forum is to review, confirm or modify the delisting objectives for the Beneficial Use Impairments (BUIs) used to define Hamilton Harbour as an Area of Concern. The objectives used to define BUIs should be: *reasonable*, and consistent with other Canadian AOCs in defining the ecosystem desired for the Harbour; *achievable* by the community; and *measurable*. In some cases, the Stakeholder Forum may determine, upon the recommendation of HHRAP staff and/or technical team, that a BUI is not impaired or applicable to Hamilton Harbour as an AOC.

**Membership:** The membership of the HHRAP Stakeholder Forum should consist of representatives who are appointed by their individual groups and agencies including: organizations, institutions, government departments, municipalities, industries, and private citizen groups which in some manner make use of or have jurisdiction over the Harbour and its watershed. The names of the groups represented the last time the Stakeholder Forum met is attached as appendix a.

Each of the bodies described above will have one member or one alternate representing it at the Stakeholder Forum table. Additional members of the bodies are encouraged to attend along with members of the public to observe the Stakeholder Forum meetings and participate as resource people.

In selecting a member and alternate, bodies are advised that the materials reviewed will be technical in nature and the member or alternate should be able to speak on behalf of their organization.

**Chair:** The Chair of the Stakeholder Forum will be nominated by the HHRAP Coordinator and elected by the membership of the Stakeholder Forum.

The chair will be responsible to:

- Call, and run meetings, with the help of a facilitator;
- Sit as a member of the Stakeholder Forum with voting rights;
- Liaise between Stakeholder Form members and the HHRAP staff;
- Seek consensus from Stakeholder Forum members on points of decision;
- Respond to and speak with media;
- Resolve conflicts.

### **Forum Members Responsibilities:**

- attend each meeting commencing at 5:30 pm;
- review material and fact sheets before each meeting;
- participate in consensus based discussion and provide advice and input;
- represent and inform their affiliation; and
- refer media requests to the Chair.

### **Principles**

- Ensure a fair, open decision making process by using a consultative approach to ensure that the interests of individuals, groups and agencies are considered.
- Decision-making is intended to be by consensus or a significant majority.

**Meeting Formats and Process:** A third party outside facilitator will assist the Stakeholder Forum in its functions and ensure stakeholders are heard and input received. The HHRAP Office will act as secretariat to the Stakeholder Forum preparing and distributing agendas, reports and meeting summaries. Meetings will be held approximately one month apart.

#### **Meeting No. 1 *Getting Started* (week of Feb 15 – 17)**

- Review of Stakeholder Forum Terms of Reference and election of Chair
- Background on the remedial action planning process and relationship to the Great Lakes Water Quality Agreement defining of BUIs and Areas of Concern.
- Overview of meeting process to follow including procedures if agreement on individual BUIs can't be reached

#### **Meeting No. 2 *Water Quality Objectives* (week of March 19 – 22)**

The following BUIs involving water quality will be reviewed after a presentation on the status and scientific understanding of the BUI.

- Eutrophication or Undesirable Algae (BUI viii)
- Restrictions on Drinking Water Consumption or Taste and Odour Problems (BUI ix)
- Beach Closings (water contact sports) (BUI x)
- Degradation of Aesthetics (BUI xi)
- Added Cost to Agriculture or Industry (BUI xii)

#### **Meeting No. 3 *Toxic Substances Objectives* (week of April 16 – 19)**

The following BUIs involving toxic substances will be reviewed after a presentation on the status and scientific understanding of the BUI

- Restriction on Fish and Wildlife Consumption (BUI i)
- Degradation of Benthos (BUI vi)
- Restrictions on Dredging Activities (BUI vii)
- Degradation of Phytoplankton and Zooplankton Populations (BUI xiii)

#### **Meeting No. 4 *Fish and Wildlife Objectives* (week of May 22 -25)**

The following BUIs involving fish and wildlife will be reviewed after a presentation on the status and scientific understanding of the BUI.

- Tainting of Fish and Wildlife Flavour (BUI ii)
- Degraded Fish and Wildlife Populations (BUI iii)
- Fish Tumours or Other Deformities (BUI iv)
- Bird or Animal Deformities or Reproductive Problems (BUI v)
- Loss of Fish and Wildlife Habitat (BUI xiv)

Meeting No. 5 *Wrap-up (week of June 18 – 22)*

- Review any outstanding issues unresolved from earlier meetings
- Finalize delisting BUIs

**Information Requirements:** At least one week prior to the meeting an agenda, the previous meeting summary, and a Fact Sheet approved by the appropriate HHRAP technical team or working group will be provided along with any recommended delisting objective for the BUI to be reviewed at the meeting. Correspondence will be by email unless otherwise requested.

An expert knowledgeable in the particular BUI will make a presentation to the Stakeholder Forum and answer questions.

Attached as appendix b are the current delisting objective statements from 2002. These are the statements that will be updated.

**Public Involvement:** Prior to the Stakeholder Forum being convened, an open house will be provided (Jan. 25, 2012) for the public giving an update on the HHRAP status and a description of the Stakeholder Forum process. Citizens will be invited to attend Stakeholder Forum meetings. At the end of the process a second public open house will be held with the updated objectives for delisting presented. Throughout the process the BARC website will be used as a “go to” location for the public including information and presentations made to the Stakeholder Forum.

**HAMILTON HARBOUR RAP FORUM MEMBERS 2002**

---

Aldershot Community Council  
Bay Area Restoration Council  
Burlington Golf and Country Club  
Burlington Sustainable Development Committee  
Canadian Environmental Law Association  
Central Area Planning Committee  
City of Burlington  
City of Hamilton  
Community Action Parkdale East  
Conservation Halton  
Dofasco Inc.  
Environment Canada  
Environment Hamilton  
Fisheries and Oceans Canada  
Friends of Red Hill Valley  
Golden Horseshoe Outdoors Club  
Green Venture  
Hamilton Beach Preservation Committee  
Hamilton Chamber of Commerce  
Hamilton Conservation Authority  
Hamilton Naturalists' Club  
Hamilton Port Authority  
Hamilton-Halton Home Builders' Association  
Hamilton-Wentworth District School Board  
LaSalle Park Marina Association  
Leander Boat Club  
Macassa Bay Yacht Club  
McMaster University  
Ontario Federation of Agriculture  
Ontario Ministry of the Environment  
Ontario Ministry of Natural Resources  
Pollution Probe  
Royal Botanical Gardens  
Royal Hamilton Yacht Club  
Stelco, Hilton Works  
Township of Puslinch  
United Steelworkers of America  
Windsurfing Association

**EXISTING BENEFICIAL USE IMPAIRMENTS AS OF 2002**

NOTE: These will be updated and circulated to the RAP Stakeholder Forum with individual fact sheets explaining the changes proposed for 2012

(Stage 2 Report, 2002)

NO.	BENEFICIAL USE IMPAIRMENTS AND HAMILTON HARBOUR DELISTING OBJECTIVES								
(i)	<p><b><i>Restriction on fish and wildlife consumption.</i></b></p> <p>That there be no restrictions on consumption of fish and wildlife from the Harbour attributable to local sources.</p>								
(ii)	<p><b><i>Tainting of fish and wildlife flavour.</i></b></p> <p>When survey results confirm no tainting of fish or wildlife flavour.</p>								
(iii)	<p><b><i>Degraded fish and wildlife populations.</i></b></p> <p>1. That the <u>fish community</u> has the following structure:</p> <ul style="list-style-type: none"> <li>a. Shift from a fish community indicative of eutrophic environments, such as white perch, alewife, bullheads, and carp to a self sustaining community more representative of a mesotrophic environment, containing pike, bass, yellow perch, and sunfish.</li> <li>b. Attain a littoral fish biomass of 200 - 250 kg/ha.</li> <li>c. Increase the species richness from 4 species to 6-7 species per transect.</li> <li>d. Increase the native species biomass from 37% to 80-90% of the total biomass.</li> <li>e. Reduce the spatial variability in fish biomass within the Harbour.</li> <li>f. Proposed nearshore fish community of Hamilton Harbour:</li> </ul> <table border="0" style="width: 100%; margin-left: 40px;"> <thead> <tr> <th style="text-align: left;"><u>Category</u></th> <th style="text-align: right;"><u>Littoral Biomass (kg/ha)</u></th> </tr> </thead> <tbody> <tr> <td>Piscivores (<i>pike, bass</i>)</td> <td style="text-align: right;">40 - 60</td> </tr> <tr> <td>Specialists (<i>Insectivores like pumpkinseeds and yellow perch</i>)</td> <td style="text-align: right;">70 - 100</td> </tr> <tr> <td>Generalists (<i>Omnivores like carp and brown bullheads</i>)</td> <td style="text-align: right;">30 - 90</td> </tr> </tbody> </table> <p>The percent of fisheries biomass allocated to the three trophic groups was based on the effects of improved water quality in the Bay of Quinte and Severn Sound. The littoral fish biomass of 200-250 kg/ha was based on electrofishing data collected from Hamilton Harbour, Bay of Quinte and Severn Sound in 1990.</p>	<u>Category</u>	<u>Littoral Biomass (kg/ha)</u>	Piscivores ( <i>pike, bass</i> )	40 - 60	Specialists ( <i>Insectivores like pumpkinseeds and yellow perch</i> )	70 - 100	Generalists ( <i>Omnivores like carp and brown bullheads</i> )	30 - 90
<u>Category</u>	<u>Littoral Biomass (kg/ha)</u>								
Piscivores ( <i>pike, bass</i> )	40 - 60								
Specialists ( <i>Insectivores like pumpkinseeds and yellow perch</i> )	70 - 100								
Generalists ( <i>Omnivores like carp and brown bullheads</i> )	30 - 90								

NO.	BENEFICIAL USE IMPAIRMENTS AND HAMILTON HARBOUR DELISTING OBJECTIVES														
(iii) cont'd.	g. Proposed nearshore fish community of Hamilton Harbour:														
	<table border="0"> <tr> <td style="text-align: left;"><u>Category</u></td> <td style="text-align: right;"><u>Littoral Biomass (kg/ha)</u></td> </tr> </table>	<u>Category</u>	<u>Littoral Biomass (kg/ha)</u>												
	<u>Category</u>	<u>Littoral Biomass (kg/ha)</u>													
	Piscivores ( <i>pike, bass</i> )	40 - 60													
	Specialists ( <i>Insectivores like pumpkinseeds and yellow perch</i> )	70 - 100													
	Generalists ( <i>Omnivores like carp and brown bullheads</i> )	30 - 90													
	<p>The percent of fisheries biomass allocated to the three trophic groups was based on the effects of improved water quality in the Bay of Quinte and Severn Sound. The littoral fish biomass of 200-250 kg/ha was based on electrofishing data collected from Hamilton Harbour, Bay of Quinte and Severn Sound in 1990.</p>														
	h. Attain an Index of Biotic Integrity (IBI) of 55-60 for Hamilton Harbour														
	2. <u>Colonial waterbirds:</u>														
	<p>The overall objective is to have a self sustaining mixed community of colonial waterbirds generally with an increase of the rarer species and a reduction in the number of ring-billed gulls which currently nest in the Harbour. These figures are subject to revision once these general levels have been reached. Management of colonial waterbirds is experimental and achieving specific populations of particular species is highly speculative.</p>														
<table border="0"> <tr> <td style="text-align: left;"><u>Suggested Interim Targets</u></td> <td style="text-align: right;"><u>Number of Pairs</u></td> </tr> <tr> <td>Ring-billed gulls (<i>Larus delawarensis</i>)</td> <td style="text-align: right;">5,000</td> </tr> <tr> <td>Common terns (<i>Sterna hirundo</i>)</td> <td style="text-align: right;">&gt; 600</td> </tr> <tr> <td>Herring gulls (<i>Larus argentatus</i>)</td> <td style="text-align: right;">350</td> </tr> <tr> <td>Caspian terns (<i>Sterna caspi</i>)</td> <td style="text-align: right;">&gt; 200</td> </tr> <tr> <td>Double-crested cormorants (<i>Phalacrocorax auritus</i>)</td> <td style="text-align: right;">200</td> </tr> <tr> <td>Black-crowned night herons (<i>Nycticorax nycticorax</i>)</td> <td style="text-align: right;">200</td> </tr> </table>		<u>Suggested Interim Targets</u>	<u>Number of Pairs</u>	Ring-billed gulls ( <i>Larus delawarensis</i> )	5,000	Common terns ( <i>Sterna hirundo</i> )	> 600	Herring gulls ( <i>Larus argentatus</i> )	350	Caspian terns ( <i>Sterna caspi</i> )	> 200	Double-crested cormorants ( <i>Phalacrocorax auritus</i> )	200	Black-crowned night herons ( <i>Nycticorax nycticorax</i> )	200
<u>Suggested Interim Targets</u>	<u>Number of Pairs</u>														
Ring-billed gulls ( <i>Larus delawarensis</i> )	5,000														
Common terns ( <i>Sterna hirundo</i> )	> 600														
Herring gulls ( <i>Larus argentatus</i> )	350														
Caspian terns ( <i>Sterna caspi</i> )	> 200														
Double-crested cormorants ( <i>Phalacrocorax auritus</i> )	200														
Black-crowned night herons ( <i>Nycticorax nycticorax</i> )	200														
3. <u>Other wildlife including waterfowl:</u>															
<p>No target will be suggested for other species of birds or animals, but a target for habitat has been suggested which will enhance wildlife populations generally. In addition, management of some species may be necessary as a result of habitat enhancement.</p>															
<p>That fish and wildlife bioassays confirm no significant toxicity from water column or sediment contaminants.</p>															

NO.	BENEFICIAL USE IMPAIRMENTS AND HAMILTON HARBOUR DELISTING OBJECTIVES
(iv)	<p><b><i>Fish tumours or other deformities.</i></b></p> <p>When incidence rates of fish tumours or other deformities do not exceed rates at unimpacted control sites that are locally relevant and when survey data confirm the absence of neoplastic or preneoplastic liver tumours in bullheads or suckers.</p>
(v)	<p><b><i>Bird or animal deformities or reproductive problems.</i></b></p> <p>When the incidence rates of deformities or reproductive problems in sentinel wildlife species do not exceed background levels in control populations.</p>
(vi)	<p><b><i>Degradation of benthos.</i></b></p> <p>Using the BEAST (Benthic Assessment of Sediment) Methodology:</p> <ol style="list-style-type: none"> <li>1. Littoral Zone (depth &lt; upper limit of maximum extent of anoxic conditions) <ul style="list-style-type: none"> <li>• Benthic community structure (BCS) not different from that of appropriate reference sites in the Great Lakes (i.e., Hamilton Harbour sites determined as “equivalent to reference conditions” by BEAST methodology) and BCS not correlated to sediment contaminant levels among sites.</li> <li>• Absence of acute or chronic sediment toxicity attributable to contaminants in sediments.</li> </ul> </li> <li>2. Profundal Zone (depth &gt; upper limit of maximum extent of anoxic conditions) <ul style="list-style-type: none"> <li>• BCS not correlated to sediment contaminant levels among sites.</li> <li>• Absence of acute or chronic sediment toxicity attributable to contaminants in sediments.</li> </ul> </li> </ol>
(vii)	<p><b>Restrictions on dredging activities.</b></p> <p>When contaminants in sediments do not exceed biological and chemical standards, criteria, or guidelines such that there are no restrictions on disposal activities associated with navigational dredging.</p>

NO.	<b>BENEFICIAL USE IMPAIRMENTS AND HAMILTON HARBOUR DELISTING OBJECTIVES</b>																																																																																	
(viii)	<i>Eutrophication or undesirable algae.</i>																																																																																	
	That there are no persistent adverse water quality conditions for each of the components attributable to cultural eutrophication. The following net loading targets provide the specific objectives.																																																																																	
	Eutrophication goals and anticipated conditions in Hamilton Harbour, Cootes Paradise, and the Grindstone Creek area:																																																																																	
	TABLE 1: Net Loading Targets (Kg/d)																																																																																	
	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Phosphorous</th> <th colspan="2">Ammonia</th> <th colspan="2">Suspended Solids</th> </tr> <tr> <th>Initial</th> <th>Final</th> <th>Initial</th> <th>Final</th> <th>Initial</th> <th>Final</th> </tr> </thead> <tbody> <tr> <td>Woodward WWTP</td> <td>140</td> <td>60</td> <td>2270</td> <td>530</td> <td>3750</td> <td>900</td> </tr> <tr> <td>Skyway WWTP</td> <td>30</td> <td>12</td> <td>470</td> <td>115</td> <td>500</td> <td>200</td> </tr> <tr> <td>King WWTP (Dundas)</td> <td>5</td> <td></td> <td>22</td> <td></td> <td>28</td> <td></td> </tr> <tr> <td>Main WWTP (Waterdown)</td> <td>1</td> <td></td> <td>5</td> <td></td> <td>5</td> <td></td> </tr> <tr> <td>CSOs</td> <td>70</td> <td>5</td> <td>160</td> <td>20</td> <td>1400</td> <td>200</td> </tr> <tr> <td>Streams *</td> <td>90</td> <td>65</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Industry (combined)</td> <td></td> <td></td> <td>400</td> <td>270</td> <td></td> <td></td> </tr> <tr> <td>Stelco</td> <td></td> <td></td> <td></td> <td></td> <td>4000</td> <td>1500</td> </tr> <tr> <td>Dofasco</td> <td></td> <td></td> <td></td> <td></td> <td>3500</td> <td>1500</td> </tr> </tbody> </table>							Phosphorous		Ammonia		Suspended Solids		Initial	Final	Initial	Final	Initial	Final	Woodward WWTP	140	60	2270	530	3750	900	Skyway WWTP	30	12	470	115	500	200	King WWTP (Dundas)	5		22		28		Main WWTP (Waterdown)	1		5		5		CSOs	70	5	160	20	1400	200	Streams *	90	65					Industry (combined)			400	270			Stelco					4000	1500	Dofasco					3500	1500
		Phosphorous		Ammonia		Suspended Solids																																																																												
		Initial	Final	Initial	Final	Initial	Final																																																																											
	Woodward WWTP	140	60	2270	530	3750	900																																																																											
	Skyway WWTP	30	12	470	115	500	200																																																																											
	King WWTP (Dundas)	5		22		28																																																																												
Main WWTP (Waterdown)	1		5		5																																																																													
CSOs	70	5	160	20	1400	200																																																																												
Streams *	90	65																																																																																
Industry (combined)			400	270																																																																														
Stelco					4000	1500																																																																												
Dofasco					3500	1500																																																																												
* Stream loadings are extremely variable from year-to-year. The percentage of reduction is based on the estimated effect of best management practice.																																																																																		
(viii) cont'd.	TABLE 2: Environmental Conditions																																																																																	
	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Hamilton Harbour</th> <th>Cootes Paradise</th> <th>Grindstone Creek Area</th> <th>Beaches</th> </tr> <tr> <th>Initial Goals</th> <th>Final Goals</th> <th>Initial Goals</th> <th>Initial Goals</th> <th>Initial Goals</th> </tr> </thead> <tbody> <tr> <td>Phosphorus concentration (ug/L)</td> <td>34</td> <td>17</td> <td>60 - 70</td> <td>60 - 70</td> <td></td> </tr> <tr> <td>Un-ionized Ammonia conc. (mg/L)</td> <td>&lt; 0.02</td> <td>&lt; 0.02</td> <td>&lt; 0.02</td> <td>&lt; 0.02</td> <td></td> </tr> <tr> <td>Chlorophyll a conc. (ug/L)</td> <td>15-20</td> <td>5-10</td> <td>20</td> <td>20</td> <td></td> </tr> <tr> <td>Secchi Disk Trans. (m)</td> <td>2</td> <td>3</td> <td>1.5</td> <td>1</td> <td>1.2</td> </tr> <tr> <td>Min. DO con. (ppm)</td> <td>&gt; 1</td> <td>&gt; 4</td> <td>&gt; 5</td> <td>&gt; 5</td> <td></td> </tr> <tr> <td>Submergent/emergent aquatic plant area (ha)</td> <td>105</td> <td>170</td> <td>240</td> <td>50</td> <td></td> </tr> <tr> <td>Suspended solids (ppm)</td> <td></td> <td></td> <td>25</td> <td>25</td> <td></td> </tr> <tr> <td>Bacteria (E. coli organisms/100 ml water)</td> <td></td> <td></td> <td></td> <td></td> <td>&lt; 100</td> </tr> </tbody> </table>							Hamilton Harbour		Cootes Paradise	Grindstone Creek Area	Beaches	Initial Goals	Final Goals	Initial Goals	Initial Goals	Initial Goals	Phosphorus concentration (ug/L)	34	17	60 - 70	60 - 70		Un-ionized Ammonia conc. (mg/L)	< 0.02	< 0.02	< 0.02	< 0.02		Chlorophyll a conc. (ug/L)	15-20	5-10	20	20		Secchi Disk Trans. (m)	2	3	1.5	1	1.2	Min. DO con. (ppm)	> 1	> 4	> 5	> 5		Submergent/emergent aquatic plant area (ha)	105	170	240	50		Suspended solids (ppm)			25	25		Bacteria (E. coli organisms/100 ml water)					< 100																	
		Hamilton Harbour		Cootes Paradise	Grindstone Creek Area	Beaches																																																																												
		Initial Goals	Final Goals	Initial Goals	Initial Goals	Initial Goals																																																																												
	Phosphorus concentration (ug/L)	34	17	60 - 70	60 - 70																																																																													
	Un-ionized Ammonia conc. (mg/L)	< 0.02	< 0.02	< 0.02	< 0.02																																																																													
	Chlorophyll a conc. (ug/L)	15-20	5-10	20	20																																																																													
	Secchi Disk Trans. (m)	2	3	1.5	1	1.2																																																																												
	Min. DO con. (ppm)	> 1	> 4	> 5	> 5																																																																													
	Submergent/emergent aquatic plant area (ha)	105	170	240	50																																																																													
Suspended solids (ppm)			25	25																																																																														
Bacteria (E. coli organisms/100 ml water)					< 100																																																																													

NO.	<b>BENEFICIAL USE IMPAIRMENTS AND HAMILTON HARBOUR DELISTING OBJECTIVES</b>										
(viii) cont'd.	<p>TABLE 3: Criteria for Determining Compliance with RAP Goals</p> <table border="1" data-bbox="331 331 1409 678"> <thead> <tr> <th data-bbox="331 331 873 363">GOAL</th> <th data-bbox="873 331 1409 363">COMPLIANCE FORMULA</th> </tr> </thead> <tbody> <tr> <td data-bbox="331 363 873 457">Compliance with environmental conditions with respect to Phosphorus, Secchi depth and chlorophyll a</td> <td data-bbox="873 363 1409 457">13 out of 13 samples analysed weekly* at the centre station from June to August are at or better than the targeted level.</td> </tr> <tr> <td data-bbox="331 457 873 520">Compliance with environmental conditions with respect to unionized ammonia</td> <td data-bbox="873 457 1409 520">Weekly samples from March to June at the centre station are not to exceed 0.02.</td> </tr> <tr> <td data-bbox="331 520 873 615">Compliance with environmental conditions with respect to dissolved oxygen</td> <td data-bbox="873 520 1409 615">Weekly samples at 1 metre from bottom at centre station, from July to September are at or better than the targeted level.</td> </tr> <tr> <td data-bbox="331 615 873 678">Compliance with environmental conditions with respect to E. coli</td> <td data-bbox="873 615 1409 678">Daily samples meet target on every day that is 48 hours after a rain event.</td> </tr> </tbody> </table> <p>* Although weekly sampling is recommended at only one location, there will be periodic sampling of a large number of locations harbour-wide to confirm representativeness of the centre station.</p>	GOAL	COMPLIANCE FORMULA	Compliance with environmental conditions with respect to Phosphorus, Secchi depth and chlorophyll a	13 out of 13 samples analysed weekly* at the centre station from June to August are at or better than the targeted level.	Compliance with environmental conditions with respect to unionized ammonia	Weekly samples from March to June at the centre station are not to exceed 0.02.	Compliance with environmental conditions with respect to dissolved oxygen	Weekly samples at 1 metre from bottom at centre station, from July to September are at or better than the targeted level.	Compliance with environmental conditions with respect to E. coli	Daily samples meet target on every day that is 48 hours after a rain event.
GOAL	COMPLIANCE FORMULA										
Compliance with environmental conditions with respect to Phosphorus, Secchi depth and chlorophyll a	13 out of 13 samples analysed weekly* at the centre station from June to August are at or better than the targeted level.										
Compliance with environmental conditions with respect to unionized ammonia	Weekly samples from March to June at the centre station are not to exceed 0.02.										
Compliance with environmental conditions with respect to dissolved oxygen	Weekly samples at 1 metre from bottom at centre station, from July to September are at or better than the targeted level.										
Compliance with environmental conditions with respect to E. coli	Daily samples meet target on every day that is 48 hours after a rain event.										
(ix)	<p><b><i>Restrictions on drinking water consumption or taste and odour problems.</i></b></p> <p>That Hamilton Harbour water outflow to Lake Ontario not give rise to water quality restrictions on the water intakes for Hamilton and Halton.</p>										
(x)	<p><b><i>Beach closings. (Water contact sports.)</i></b></p> <ol style="list-style-type: none"> <li>1. That Hamilton Harbour effluent to Lake Ontario not give rise to conditions which would cause restrictions on open Lake water contact sports.</li> <li>2. That water quality conditions in the west-end and in the north-half of the Harbour, be such as to permit opening of beaches and which would cause no significant restriction on water contact sports.</li> </ol>										
(xi)	<p><b><i>Degradation of aesthetics.</i></b></p> <p>When the waters are free of any substance which produces a persistent objectionable deposit, unnatural colour or turbidity, or unnatural odour (e.g. oil slick, surface scum, algae).</p>										
(xii)	<p><b><i>Added cost to agriculture or industry.</i></b></p> <p>When there are no significant additional costs required to treat water prior to use for industrial purposes (i.e. intended for commercial or industrial applications and non-contact food processing). Cost associated with zebra mussels or other invasive organisms are excepted. An added cost related to withdrawal of water from the Harbour to agriculture is not appropriate as this is not a use directly applicable to Hamilton Harbour.</p>										

NO.	BENEFICIAL USE IMPAIRMENTS AND HAMILTON HARBOUR DELISTING OBJECTIVES
(xiii)	<p><i>Degradation of phytoplankton and zooplankton populations.</i></p> <p>When phytoplankton and zooplankton community structure does not significantly diverge from unimpacted control sites of comparable physical and chemical characteristics. Further in the absence of community structure data, this use will be considered restored when phytoplankton and zooplankton bioassays confirm no significant toxicity in ambient waters.</p>
(xiv)	<p><i>Loss of fish and wildlife habitat.</i></p> <ol style="list-style-type: none"> <li>1. Provide 500 ha of emergent and submergent aquatic plants in Hamilton Harbour, Cootes Paradise, Grindstone Creek delta, and Grindstone Creek marshes in accordance with the Fish and Wildlife Habitat Restoration Project (360 ha FWHRP sites + 140 ha littoral zone).</li> <li>2. Provide 15 km of littoral shore.</li> <li>3. Provide 300 ha of wildlife habitat.</li> <li>4. Provide 3 ha of colonial nesting bird habitat.</li> </ol>